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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/069,741   | 02/26/2002  | Delphine Legrand     | FR 000067           | 5244             |
| 24738  | 7590        | 11/29/2006           | EXAMINER            |                  |
| PHILIPS ELECTRONICS NORTH AMERICA CORPORATION<br>INTELLECTUAL PROPERTY & STANDARDS<br>1109 MCKAY DRIVE, M/S-41SJ<br>SAN JOSE, CA 95131 |             |                      | AGHDAM, FRESHTEH N  |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2611                |                  |

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

10/069,741

Applicant(s)

LEGRAND ET AL.

Examiner

Freshteh N. Aghdam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see page 6, filed 9/15/2006, with respect to the rejection(s) of claim(s) 1-10 under Denno et al have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Morelli et al.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Morelli et al (Feedforward Frequency Estimation for PSK a Tutorial Review; IEEE Vol. 9, No. 2 March-April 1998; Pg. 103-116).

As to claims 1, 4, and 6, Morelli discloses a communication system comprising at least a transmitter and a receiver intended to receive symbols coming from a phase shift keying modulation (Pg. 103, Abstract), and comprising estimation means for estimating a frequency error (Pg. 103, Abstract) relating to a symbol based on a sequence symbol phases (Pg. 107;  $\arg [z(k)]$ ), characterized in that said receiver comprises calculation means for calculating a phase sequence, called an initial sequence (Pg. 107, Col. 1,

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$\arg[z(k)]$ , based on decision made on symbols, and means for detecting and correcting phase jumps in this initial sequence (i.e. by unwrapping the sequence), to supply a phase sequence, called final sequence (i.e. a new sequence  $[\Phi(k)]$ ; pg. 107, Col. 1-2), to said frequency error estimation means (i.e.  $f^d$ ; Pg. 107, Section 4.1, Eq. 21-22).

As to claim 5, Morelli discloses that the initial sequence ( $\arg [z(k)]$ ) is modified (i.e. unwrapped) phase group by phase group (Pg. 107, Col. 1-2).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morelli et al, and further in view of De Le'on II et al (US 5,553,014).

As to claims 2 and 7, Morelli discloses forming the final phase sequence from an initial sequence, wherein the final sequence is the initial sequence that is corrected for phase jumps (Pg. 107, Eq. 18-22) and applying the Tretter algorithm to the initial phase sequence to obtain the straight-line equation by employing the least square methods (Pg. 107, Section 4.1). Morelli is not explicit about forming the final phase sequence by modifying the initial sequence so as to produce a plurality of modified sequences, which each compensates for a phase jump configuration, calculating straight line equations for the initial and modified sequences; calculating the mean difference between the

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sequences and the straight line equations; and obtaining the final sequence by the sequence whose mean difference is minimal. One of ordinary skill in the art would clearly recognize that employing an adaptive algorithm for estimation purposes such as least square algorithms such as LS, LMS, and RLS is well known in the art and it is done by iteratively determining the curve or line that best describes the relationship between expected and observed sets of data and minimizing the sum of the errors squared by keep modifying the observed data and until the algorithm converges the error signal exceeds its minimum value and it is more accurate comparing to the fixed method counterpart as it is evidenced by De Le'on II (Col. 1, Lines 28-60). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of De Le'on II with Morelli in order to accurately estimate the final sequence, wherein the final sequence is the initial sequence that is corrected for phase jumps by iteratively modifying the initial sequence and minimizing the error metric.

As to claims 3 and 8, Morelli discloses that the initial sequence ( $\arg [z(k)]$ ) is modified (i.e. unwrapped) phase group by phase group (Pg. 107, Col. 1-2).

As to claim 9, one of ordinary skill in the art would clearly recognize that implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor is well known in the art.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morelli et al.

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As to claim 10, one of ordinary skill in the art would clearly recognize that implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor is well known in the art.

### ***Allowable Subject Matter***

Claims 7-9 are allowed. Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hiller (US 4,983,906) see figure 2, columns 1-2 and 4; Hespelt et al (US 4,847,872) see columns 3-4.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Freshteh Aghdam  
November 24, 2006



**KEVIN BURD**  
**PRIMARY EXAMINER**